UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,406	01/02/2002	Sara H. Basson	YOR920010454US1	2265

7590	12/21/2004	EXAMINER

Ryan, Mason & Lewis, LLP
1300 Post Road, Suite 205
Fairfield, CT 06430

VO, HUYEN X

ART UNIT	PAPER NUMBER
2655	

DATE MAILED: 12/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/040,406	BASSON ET AL.
	Examiner	Art Unit	
	Huyen Vo	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>02 January 2002</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-33</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-8 and 10-33</u> is/are rejected.

7)☒ Claim(s) <u>9</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>02 January 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by
> another filed in the United States before the invention by the applicant for patent or (2) a patent
> granted on an application for patent by another filed in the United States before the invention by the
> applicant for patent, except that an international application filed under the treaty defined in section
> 351(a) shall have the effects for purposes of this subsection of an application filed in the United States
> only if the international application designated the United States and was published under Article 21(2)
> of such treaty in the English language.

2.   Claims 1-2, 4, 19-20, 22, and 31 are rejected under 35 U.S.C. 102(e) as being

anticipated by Garudadri et al. (US Patent No. 6671669).

3.   Regarding claim 1, Garudadri et al. disclose a method for transcribing speech of

a plurality of speakers, comprising: providing said speech to a plurality of speech

decoders, each of said decoders using a speaker model for one of said speakers and

generating a confidence score for each decoded output (*figure 1 or referring to 8, In. 33-*

67); and selecting a decoded output based on said confidence score (*the process of*

figures 7-9).

4.   Regarding claim 19, Garudadri et al. disclose a system for transcribing speech of

a plurality of speakers, comprising:

a memory that stores computer-readable code (*col. 13, In. 18-60*); and a

processor operatively coupled to said memory, said processor configured to implement

said computer-readable code (*col. 13, ln. 18-60*), said computer-readable code

configured to:

provide said speech to a plurality of speech decoders, each of said decoders

using a speaker model for one of said speakers and generating a confidence score for

each decoded output (*figure 1 or referring to 8, ln. 33-67*); and select a decoded output

having a highest confidence score (*the process of figures 7-9*).

5.   Regarding claim 31, Garudadri et al. disclose an article of manufacture for

transcribing speech of a plurality of speakers, comprising:

a computer readable medium having computer readable code means embodied

thereon (*col. 13, ln. 18-60*), said computer readable program code means comprising:

a step to provide said speech to a plurality of speech decoders, each of said

decoders using a speaker model for one of said speakers and generating a

confidence score for each decoded output (*figure 1 or referring to 8, ln. 33-67*); and a

step to select a decoded output having a highest confidence score (*the process of*

figures 7-9).

6.   Regarding claims 2, 4, 20, and 22, Garudadri et al. further disclose the method

and system of claims 1 and 19, further comprising the step of aligning each of said

decoded outputs in time (*the DTW Matching in elements 118, 120, and 122 in figure 1 is*

the aligning step), and the step of presenting said selected decoded output to a user

(*col. 8, ln. 64 to col. 9, ln. 2*).

7.   Claims 11-18, 23-30, and 32-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Murveit et al. (US Patent No. 6671669).

8.   Regarding claim 11, Murveit et al. disclose a method for transcribing speech of a plurality of speakers, comprising: providing said speech to a speaker independent speech recognition system and a speaker specific speech recognition system (*referring to figures 3-5 or col. 4, ln. 1 to col. 5, ln. 67*); and decoding said speech using said speaker independent speech recognition system whenever the identity of the current speaker is unknown (*elements 206, 208, and 210 in figure 3*).

9.   Regarding claim 15, Murveit et al. disclose a method for transcribing speech of a plurality of speakers, comprising: providing said speech to a speaker independent speech recognition system and a speaker specific speech recognition system (*referring to figures 3-5 or col. 4, ln. 1 to col. 5, ln. 67*); and decoding said speech using said speaker specific speech recognition system with a speaker model for an identified speaker until there is a speaker change (*the operation of figure 3, at first when the speaker using the system is speaker specific, acoustic profile of that speaker is used in the speech recognition process. However, when a different speaker uses the system detected by the ID Speaker 204, the system retrieves profile of said different speaker for use in the speech recognition process*).

10.   Regarding claim 23, Murveit et al. further disclose a system for transcribing

speech of a plurality of speakers, comprising:

        a memory that stores computer-readable code (*element 104 and 106 in figure 2*);

and a processor operatively coupled to said memory, said processor configured to

implement said computer-readable code (*Processor 102 in figure 2*), said computer-

readable code configured to:

        provide said speech to a speaker independent speech recognition system and a

speaker specific speech recognition system (*referring to figures 3-5 or col. 4, ln. 1 to col.

5, ln. 67*); and decode said speech using said speaker independent speech recognition

system whenever the identity of the current speaker is unknown (*elements 206, 208,

and 210 in figure 3*).

11.   Regarding claim 27, Murveit et al. disclose a system for transcribing speech of a

plurality of speakers, comprising:

        a memory that stores computer-readable code (*element 104 and 106 in figure 2*);

and a processor operatively coupled to said memory, said processor configured to

implement said computer-readable code (*Processor 102 in figure 2*), said computer-

readable code configured to:

        provide said speech to a speaker independent speech recognition system and a

speaker specific speech recognition system (*referring to figures 3-5 or col. 4, ln. 1 to col.

5, ln. 67*); and decode said speech using said speaker specific speech recognition

system with a speaker model for an identified speaker until there is a speaker change

(*the operation of figure 3, at first when the speaker using the system is speaker specific, acoustic profile of that speaker is used in the speech recognition process. However, when a different speaker uses the system detected by the ID Speaker 204, the system retrieves* ^{a} *profile of said different speaker for use in the speech recognition process*).

12.   Regarding claims 12-14, 17-18, 24-26, and 29-30, Murveit et al. further disclose the method and system of claims 11, 15, 23, and 27, wherein said decoding step continues until a speaker identification system identifies an unknown speaker (*the operation in figure 3 is a continuous process, speaker changes are continuously monitored by the ID Speaker 204*), wherein one or more of said speaker independent speech recognition system and said speaker specific speech recognition system are on a remote server (*Speech Recognition System in figure 2*), and the step of presenting said selected decoded output to a user (*col. 7, ln. 9-22*).

13.   Regarding claims 16 and 28, Murveit et al. further disclose the method and system of claims 15 and 27, further comprising the step of decoding said speech using a speaker independent speech recognition system until the identity of a speaker is determined and the appropriate speaker model is loaded (*the operation of figure 3, at first when the speaker using the system is speaker specific, acoustic profile of that speaker is used in the speech recognition process. However, when a different speaker uses the system detected by the ID Speaker 204, the system retrieves profile of said different speaker for use in the speech recognition process*).

14.   Regarding claim 32, Murveit et al. disclose an article of manufacture for transcribing speech of a plurality of speakers, comprising:

a computer readable medium having computer readable code means embodied thereon (*memory system 104 in figure 4*), said computer readable program code means comprising:

a step to provide said speech to a speaker independent speech recognition system and a speaker specific speech recognition system (*referring to figures 3-5 or col. 4, ln. 1 to col. 5, ln. 67*); and

a step to decode said speech using said speaker independent speech recognition system whenever the identity of the current speaker is unknown (*elements 206, 208, and 210 in figure 3*).

15.   Regarding claim 33, Murveit et al. disclose an article of manufacture for transcribing speech of a plurality of speakers, comprising:

a computer readable medium having computer readable code means embodied thereon (*memory system 104 in figure 4*), said computer readable program code means comprising:

a step to provide said speech to a speaker independent speech recognition system and a speaker specific speech recognition system (*referring to figures 3-5 or col. 4, ln. 1 to col. 5, ln. 67*); and

a step to decode said speech using said speaker specific speech recognition system with a speaker model for an identified speaker until there is a speaker change (*the operation of figure 3, at first when the speaker using the system is speaker specific, acoustic profile of that speaker is used in the speech recognition process. However, when a different speaker uses the system detected by the ID Speaker 204, the system retrieves profile of said different speaker for use in the speech recognition process*).

Claim Rejections - 35 USC § 103

16.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17.   Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garudadri et al. (US Patent No. 6671669) in view of Baker (US Patent No. 6122613).

18.   Regarding claims 5-7, Garudadri et al. fail to specifically disclose the method of claim 1, further comprising the step of manually selecting an alternate decoded output if said assigned output is incorrect, the step of adapting said selecting step based on said manual selection, and the step of presenting several decoded outputs to a user with an indication of said corresponding confidence score.

However, Baker teach the step of manually selecting an alternate decoded output if said assigned output is incorrect (*col. 8, ln. 33 to col. 9, ln. 40*), the step of adapting said selecting step based on said manual selection (*col. 9, ln. 18-40*), and the step of presenting several decoded outputs to a user with an indication of said corresponding confidence score (*col. 8, ln. 33 to col. 9, ln. 40*).

Since Garudadri et al. and Baker are analogous art because they are from the same field of endeavors, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Garudadri et al. by incorporating the teaching of Baker in order to enable the user to correct misrecognized words and to train the system to enhance subsequent recognitions.

19.   Claims 3, 10, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garudadri et al. (US Patent No. 6671669) in view of Murveit et al. (US Patent No. 6671669).

20.   Regarding claim 10, Garudadri et al. fail to disclose the method of claim 1, wherein said selecting step further comprises the step of determining if a decoded output includes an isolated word from a second speaker in a string of words from a first speaker. However, Murveit et al. teach that the selecting step further comprises the step of determining if a decoded output includes an isolated word from a second speaker in a string of words from a first speaker (*Speaker ID 204 in figure 3 determines speaker changes*).

Since Garudadri et al. and Murveit et al. are analgous art because they are from the same field of endeavors, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Garudadri et al. by incorporating the teaching of Murveit et al. in order to specify the system to use speaker-specific profile in recognizing speech to enhance speech recognition accuracy.

21.   Regarding claims 3 and 21, Garudadri et al. fail to specifically disclose the method and system of claims 1 and 19, wherein one or more of said speech decoders are on a remote server. However, Murveit et al. teach that one or more of said speech decoders are on a remote server (*Speech Recognition System 100 in figure 2*).

Since Garudadri et al. and Murveit et al. are analgous art because they are from the same field of endeavors, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Garudadri et al. by incorporating the teaching of Murveit et al. in order to distribute the processing load from the limited-processing-capability device.

22.   Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garudadri et al. (US Patent No. 6671669) in view of Chao Chang et al. (US Patent No. 6567778).

23.   Regarding claim 8, Garudadri et al. fail to specifically disclose the method of claim 1, further comprising the step of presenting said decoded output as a string of words if said corresponding confidence score exceeds a certain threshold and as a

string of phones if said corresponding confidence score is below a certain threshold. However, Chao Chang et al. teach the step of presenting said decoded output as a string of words if said corresponding confidence score exceeds a certain threshold and as a string of phones if said corresponding confidence score is below a certain threshold (*element 116 in figure 1, if the confidence score is lower than the threshold, the user is queried to re-input the low confidence score words. Thus, the query must represent a series of phones*).

Since Garudadri et al. and Chao Chang et al. are analgous art because they are from the same field of endeavors, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Garudadri et al. by incorporating the teaching of Chao Chang et al. in order to allow the user to correct misrecognized words to enhance speech recognition in subsequent recognitions.

Allowable Subject Matter

24.   Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Garudadri et al. disclose a method and system that combines speech recognition engines and resolves any differences between the results of individual speech recognition engines (*referring to figure 1*). Murveit et al. teach a speech recognition adaptation system that whenever a new speaker is encountered, the system

uses the speaker independent models to carry out speech recognition. At the same time the speaker independent models are used to adapt the speech of the new speaker. The adapted speech for the speaker is stored in memory for use in subsequent speech recognition of this speaker (*referring to figures 3-5*). However, both Garudadri et al. and Murveit et al. fail to specifically disclose the step of "*presenting said decoded output as a string of words for the decoded output having the highest confidence score and as phones or syllables for all other decoded outputs.*" Furthermore, it would have not been obvious to one of ordinary skill in the art at the time of invention to modify prior art of record to realize the claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huyen Vo whose telephone number is 703-305-8665. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 703-305-4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Examiner Huyen X. Vo   November 18, 2004

***

SUSAN MCFADDEN
PRIMARY EXAMINER